The Role and Function of Urban Land Markets in Market Economies

by

David E. Dowall
Professor of City and Regional Planning
University of California at Berkeley

presented at

Workshop on Privatization of Land in Ukraine

Sponsored by

Ministry of Construction and Architecture, State Committee on Land Resources, and United States Agency for International Development

Kiev, Ukraine

May 12-14, 1993

What Urban Land Markets Do

Markets provide for the exchange of goods and services between buyers and sellers. In market economies there are a multitude of markets: markets for food, labor, capital and land. In some instances markets are highly organized and buyers and sellers go to specific places to execute transactions, a good example is the New York Stock Exchange. However, in most cases, markets are less structured and buyers and sellers contact each other through advertising, auctions or brokers.

All market transactions have three dimensions: a product a quantity and a price. Buyers and sellers enter markets to attempt to sell or buy goods and services. A buyer's process to effect a market transaction begins with a search for the good or service he or she is interested in buying. Once sellers have been found, the buyer then proceeds to determine the asking prices of the various sellers. If the buyer is economically rational, he will always attempt to purchase the good or service at the lowest possible price. However, he may end up rejecting all sales offers, if he deems that the asking prices are too high.

A seller's process to effect a market transaction begins with a search for buyers. Once a group of buyers has been found, the seller will attempt to sell the good or service at the highest possible price. In the end he may reject all offers from buyers if they are too low, retaining the good or service. An important feature of all markets is their voluntary nature; neither buyers nor sellers are forced to sell or buy. Each decides whether to buy or

sell based on the actual price they would pay or receive. Land markets follow these general patterns as well.

Land markets perform four important functions: 1) they bring buyers and sellers together to facilitate transactions; 2) they set prices for land; 3) land markets allocate land by setting prices so that the land market "clears", that is, the quantity of land offered for sale equals the quantity of land demanded; and 4) land prices play an important role in ensuring that land is efficiently used. If a buyer has to pay a high price for a land parcel because there are few such parcels for sale, he will use the land intensively, perhaps building a multi-story building. This pattern will be described below in greater detail.

Requirements for Efficient Land Markets

If urban land markets are competitive they will operate efficiently. There are six important conditions necessary for competitive land market operation: well defined property rights; voluntary participation; many buyers and sellers; free entry and exit; perfect information and similarity of product. Markets need well-defined property rights, so that sellers and buyer can clearly determine what they can and cannot do with land and property. These rights need to be unambiguous and easy to transfer from sellers to buyers.

Buyers and sellers must not be forced into market transactions, all market activities should be voluntary. This is especially important for land and housing markets. Households shopping for housing should have the option of refusing to accept an offer if it does not

meet their requirements and budget. If such conditions prevail, consumer sovereignty will develop, forcing land and housing developers to be more responsive to consumers. Only under very limited conditions should people be forced to sell their property. These conditions usually exist in cases of bankruptcy and when the government needs land for public projects.

Markets work best when there is competition, and this requires that there are many buyers and sellers. If markets are comprised of a multitude of buyers and sellers, no one seller or buyer will be able to control or influence market prices. The seller will quickly determine the current market price and set his accordingly. Under competitive conditions, buyers will have little control over the market price and will have to accept or reject seller offers. Under competitive market conditions, individual buyers and sellers are price takers, not price setters.

Actual market prices are determined by the combined activities of all individual buyers and sellers. Each seller will determine how many units of land he wants to sell at each specific price. The aggregation of these individual decisions determines the market supply of land. Each buyer determines how many units of land he wants to buy at each specific price. The aggregation of these individual decisions determines the market demand for land. In the marketplace, these supply and demand schedules determine the market price, where the quantity demanded equals the quantity supplied. If a sufficient number of sellers decide to limit the amount of land they are willing to sell, prices will start to rise. On the other hand, if buyers leave the market, the market price of land will decrease. The

dynamics of the marketplace yield more efficient outcomes if there are many buyers and sellers, so that no individual buyer or seller can control the market.

Markets should be open, so that buyers and sellers can freely enter and exit. If market prices rise, new sellers and suppliers should be able to enter the market and offer land for sale. If entry is restricted, existing sellers may be able to earn excess profits and buyers will pay more then necessary. Free entry and exit will produce market outcomes which allocate resources at their lowest possible cost.

Markets are information intensive, and buyers and sellers must be fully informed in order to make rational decisions. This means that information should be easy to get. At a minimum buyers and sellers need information about prices, costs, products, and buyer and seller preferences.

Finally, products traded within a market should be relatively similar. If there is product similarity, then buyers and sellers will focus more on costs and prices than on product characteristics.

If all of these conditions are in place, land markets will operate efficiently, allocating land to users at prices reflecting the marginal cost of production. Buyers will pay the lowest possible prices for land. The next section considers factors which affect the demand for and supply of land.

Demand and Supply Factors

What shapes the demand for and supply of land? The demand for land is derived from various activities using land: housing, factories, retail shops, farms, government facilities, etc. Under conditions of derived demand, the demand for land will be determined by the demand for these activities. The availability of credit to finance land will enhance demand, shortages will dampen demand.

On the other hand, some buyers purchase land not for developing it but to use it as a "place" to store assets and protect them from inflation. In high inflation environments, the demand for land as a hedge against inflation, is substantial. Since these buyers do not develop their land, idling of land becomes widespread in high inflation situations.

The supply of land available for urban development is determined by topography, distribution of infrastructure, master plan and zoning policies, and the willingness of land owners to sell parcels. Steep slopes, wetlands and hazardous areas limit the supply of land for urban development. Infrastructure networks also largely determine the supply of developable land as well. Government policies limit land supply as well especially if land development policies are restrictive. Changes in these demand and supply factors bring about shifts in demand and supply schedules. For example, if a city alters its land development policy and creates a greenbelt around the city, the supply of land available for development will shrink. If a city is suddenly confronted with a flood of immigrants needing

housing, the demand schedule for land will shift, and more land will be demanded at various prices.

Land Prices and Land Bids

In the land market, buyers typically bid for sites offered for sale on the market. The process is competitive, with many buyers bidding for the same site. The bidder making the highest bid "wins" and purchases the site. The competition, insures that bidders will make the highest possible bid. The actual amount that a land developer will bid for a site depends on the following factors:

- 1) what he can build on the site;
- 2) how much the site and building can be sold for after development;
- 3) the cost of developing the site and building;
- 4) how much profit the developer needs to make to compensate him for his time and risk.

This method of bid determination is called the land residual method. The bid is determined by identifying what can be built on the site, calculating how much the development could be sold for, estimating the total cost of constructing the project, and determining what level of profit is required in order to take on the risk of development. Subtracting cost and profit from sales revenue yields a residual value which sets the upper limit that the developer will be willing to pay for the site. If he were to bid a higher price

for the site than the residual, his profit would decline. If he bids less, he stands to increase his profit.

In the land market, land developers (and those wanting land for their own projects) search and compete for sites. This bidding process insures that land is used efficiently, and is developed to its highest and best use. If a developer makes a bid for a site which is based on a low-intensity development plan that generates limited revenues, he stands the chance of loosing out to other bidders proposing more intensive uses. The land market encourages developers to develop sites to their highest economic potential, picking that use and building at that density which will yield the highest residual land value.

In cities were land utilization is governed by competitive bidding for land, urban land is used efficiently. It is rare to find vacant or grossly underutilized parcels of land in the center of large cities in market economies. Developers and landowners seek to maximize their profits by developing land at its highest possible use, limited by land use and planning regulations.

If the demand for developed property increases (the number of households requiring housing or economic activity expands) property prices and rents will increase. In such cases, land developers will increase their bids for land since they will be able to sell or rent completed projects at higher rates. If developers bid higher prices for land, more parcels will be offered for sale on the market, and gradually the land market will expand to a new

level of output meeting the increased demand for housing, commercial or industrial space.

The next section considers specific factors which influence land price bids.

Factors Affecting Land Price Bids

A variety of factors affect the level of land price bids. The most important ones include: type of development; density of development; location of plot; cost of construction; cost of infrastructure; cost of financing; taxes; demand for development, supply of land; and level of competition.

Uses which generate the highest net revenues per buildable square meter yield the greatest residual land value. For example, assume a 2,000 square meter site can be developed with either 10,000 square meters of residential or office space. If office space sells for \$4,000 per square meter, costs \$2,800 square meter to build, and the developer requires a profit of \$400 per square meter (10% of sales price); the developer will be able to bid \$8,000,000 for the site [(\$4,000-\$2,800-\$400)*10,000m2], \$4,000 per square meter. On the other hand, if the developer develops a residential project on the same site, his bid will change. If residential space sells for \$3200 per square meter, costs \$2500 per square meter and the developer requires a profit of \$320 (again 10% of sales revenue), the developer will be able to bid \$3,800,000 for the site [(\$3,200-\$2,500-\$320)*10,000m2], \$1,900 per square meter.

Bids will increase if the density of development increases. If the office development density is raised from an FAR of 1:5 to an FAR of 1:6, the developer will be able to build 12,000 square meters of office space and therefore bid more for the site³/4\$9,600,000, or \$4,800 per square meter.

Location greatly affects land prices. For example, since retailers will pay more for a building if it is on a busy shopping street than if it is on a less active street (because they expect to achieve higher sales rates per square meter), developers will be able to bid more for the site.

If a project costs more to construct, the potential land rent will be less. This is because the developer will have less net revenues to allocate to profit and land. If the cost of office construction increases from \$2,800 to \$3,000 per square meter, the maximum bid will decline to \$6,000,000 (\$3,000 per square meter). Increased costs for infrastructure, project financing and income taxes will have similar impacts on land values.

If the demand for a site's potential use increases, the sales price or rental income derived from the project will increase. This means that the developer will have a larger residual to allocate his profit and land bid.

If the supply of land available for development is limited, demand pressures for sites will drive up sale prices and rental rates and in tern increase the residual available for land bids and profits. If there is limited competition in the market, developers will tend to

increase their profits, but in the long run, more profit-seeking developers will enter the market and drive down profit levels.

All of these factors are constantly at work in markets and they continuously effect land prices. Maintaining smooth and efficient land market operation requires eliminating barriers to entry, promoting competition and avoiding unnecessary regulations which constrain the market. The next section considers what roles government should play in facilitating urban land market operation.

The Role of Government in Land Markets

There are three generally accepted justifications for government interventions into urban land markets:

- 1) elimination of market imperfections and failures to increase operating efficiencies;
- removing externalities so that the social costs of land market outcomes correspond more closely to private costs; and
- 3) to redistribute society's scarce resources so that disadvantaged groups can share in society's output.

These principles apply to urban land policy in a number of ways. The first two, seek to increase the allocative efficiency of land market outcomes. The third objective seeks to

improve the equity of land market outcomes by targeting land resources to low and moderate income groups.

Efficiency enhancing government interventions include increasing the level and transparency of information about land markets, and removing market imperfections, failures and externalities. A common governmental action to increase the clarity of land market is to provide better titling and registration, and more comprehensive land information systems. For example, in cases where there is a poorly functioning land registration system, buyers of land are often not sure if they are actually buying from the "real" owner. The lack of clear proof of ownership imposes substantial costs on the land market. Potential buyers must conduct extensive research on property ownership before deciding to enter into the transaction. Owners of untitled property are unable to use the land as collateral for obtaining loans from financial institutions and must either forgo credit or pursue more expensive channels of borrowing. In some cases land disputes are so widespread that they effectively "shutdown" land markets.

Another argument for government intervention into the land supply system is the frequent failure of private developers to provide essential services because they cannot profitably produce and sell them. Examples of such goods include parks and open space, roads and sidewalks, and community facilities such as drainage and water systems. Goods that are not provided by the private sector are frequently referred to as "public goods" and many governments have taken a variety of initiatives to fill this gap. In many countries

parastatal organizations such as land development authorities have been created to provide low-cost

land developments and housing. In other cases, governments have adopted regulations compelling the private sector to provide necessary public goods when they build projects.

Governments routinely adopt a variety of planning controls, building standards and land development laws that attempt to eliminate external costs associated with land development. Development controls limit building heights and bulk in order to ensure that surrounding properties are not adversely affected by new development. Zoning and planning regulations seek to restrict the types of activities permitted on land, so that noisy and dusty factories do not adversely affect residential neighborhoods. Such laws are also used to control development intensity so that existing infrastructure is not over burdened.

The third urban land policy objective seeks to improve economic equity, by allocating resources to low-income groups. In the absence of government intervention in urban land markets low-income households may have difficultly obtaining access to land for housing. It is quite common for government to directly allocate land for housing to these low-income groups.

A city's or a nation's urban land policy normally calls for a variety of specific laws, regulations and actions. Quite often, the central government decides to take the lead to solve land management problems, in spite of the fact that most land policy issues are of local concern. Frequently, government intervention is misdirected. There is too much regulation

and not enough facilitating and enabling actions to support private land development. In the rush to "patch externalities" governments implement a "blizzard" of regulations which smother formal private sector initiatives and overconstrain urban land markets. At the same time, government routinely fails to create land titling, registration and information systems which are so critical for efficient land market operation. They also neglect infrastructure needs and programs to modernize and redevelop old urban areas. Care should be taken to seek a proper balance between government and private sector responsibilities for land market operations.

Conclusion

This paper has outlined the basic analytical and theoretical structure of land market operation. It has explained the purpose of markets, described how they work and analyzed how developers decide how much to pay for land. It has also explained what factors affect land price bids and provided a justification for government intervention into urban land markets.